ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AMACD02020
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Eumops underwoodi*
COMMON NAME: Underwood's Bonneted Bat, Underwood's Mastiff Bat
SYNONYMS: *Eumops sonoriensis* Benson
FAMILY: Molossidae

AUTHOR, PLACE OF PUBLICATION: Goodwin, 1940. Am. Mus. Novit., 1075:2.

TYPE LOCALITY: Honduras, La Paz, 6 km N. Chinacla, 3,000 feet.

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: The species *underwoodi* is 1 of 3 species in the genus *Eumops* in North America; the others are *E. perotis* (SW United States), and E. glaucinus (southern tip of Florida). There are 2 subspecies recognized in *Eumops underwoodi, E. u. underwoodi* and *E. u. sonoriensis*. *E. u. sonoriensis* is found in Arizona.

DESCRIPTION: Large bat, total length 16.0-17.0 cm (6.4-6.8 in.), length of head and body about 13.0 cm; forearm 6.0-7.4 cm (2.6-2.96 in.); hind foot 15.0-18.0 mm (0.6-0.72 in.); weight 45-65 g. Long, narrow wings; wingspan 50.0-54.0 cm (20.0-21.6 in.). Ears 28.0-33.0 mm (1.12-1.32 in), meet at midline, projecting forward; ears just reach to tip of nose when laid forward; tragus small and rounded. Distal half of tail free from interfemoral membrane. Color varies from cinnamon to mummy brown and the under parts are hazel. Fur bicolored, lighter at base. A few long guard hairs on rump extend 7.0-10.0 mm (0.28-0.4 in.) beyond rest of fur. Males with well-developed gular gland (as all Molossidae). Skull short, wide, and unusually strongly ridged.

AIDS TO IDENTIFICATION: Superficially similar to all other free-tailed bats, but larger than *Tadarida*. Upper lip of *Tadarida* displays vertical wrinkles; lips of *Eumops* are smooth. *E. underwoodi* is most similar to *E. perotis* with which it may be sympatric in Arizona. *E. perotis* is slightly larger, forearm 7.3-8.3 cm (2.92-3.32 in.); and has much longer ears, 36.0-47.0 mm (1.44-1.88 in), reaching beyond nose when laid forward; tragus broad and square; and lacks long bristle-like hairs like those that protrude from rump of *E. underwoodi*. *E. u. underwoodi* color varies from a light yellowish to grayish-brown dorsally and is paler ventrally.

ILLUSTRATIONS: Black and white photo (Barbour and Davis 1969: 228, 229, 230)
Color photo (Barbour and Davis 1969: plate XXIII)
Color photo (Whitaker 1980: plate 148)

Color photo (BCI *in* http://www.batcon.org/discover/species/eunderw.html)
Color photo (Wilson 1999)
Color photo (Harvey 1999)

TOTAL RANGE: Found from western Honduras through the western mainland of Mexico, reaching most northern part of its range just north of the US/Mexico border from Sasabe to Organ Pipe National Monument, Pima County, Arizona. However, according to Wilson (1999) and Hall (1981), the range is from southern Arizona to Sonora, Mexico.

RANGE WITHIN ARIZONA: Known from four localities near Sasabe and the vicinity of the Baboquivari Mountains, and from Organ Pipe Cactus National Monument, Pima County.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Despite their great size, and formidable dentition, these bats seem rather gentle. Their presence can be detected by their characteristic high pitched "peeps" emitted several times a minute when flying. These "peeps" are quite intense and may actually hurt the ears of an observer if the bat passes too close. Probably roosts in crevices along steep cliffs, perhaps in cracks of buildings. According to Cockrum, 1981, the "day roosts are probably in high (30-40 feet or more above ground level) rock crevices in steep cliffs." Narrow wings provide poor maneuverability; cannot take off from a flat surface. Water sites for drinking must provide a large open-water surface (15 to 30 feet or more) for the long gliding approach of this bat. It has been reported at a flight speed of 43 km per hour.

Presumably a year-round resident in Arizona. Active during the warm months and hibernates in high rock crevices during winter. May occasionally be active during winter. Cockrum (1981) reports male and female bats active at Organ Pipe Cactus National Monument during the months of January, March, May, June, August and September.

REPRODUCTION: Apparently single young born in late June or July. A female gave birth on July 5 to a normal young which was successfully raised in captivity (Constantine, 1961).

FOOD HABITS: Feeds on night flying insects 6 to 60 mm in length. Ross (1967) found *E. underwoodi* to take 13% short-horned grasshoppers and 47% scarab beetles. Very little is known about its natural feeding habits.

HABITAT: Very little known about preferred habitat. Has been netted over waterholes in desert and mesquite/grassland situations. In Arizona it has been found in sonoran desert habitat and in Mexico in pine-oak forests (Pierson, year unknown). While it is presumed that they roost primarily in rock crevices on cliff faces, the only identified roost was in a large, hollow tree in Jalisco, Mexico.

ELEVATION: 1,000 ft. (305 m) at Organ Pipe Cactus National Monument,

4,000 ft. (1,220 m) near Sasabe. According to AGFD HDMS unpublished records (accessed 2003), the elevation ranges from 1,080-3,760 ft (329-1146 m).

PLANT COMMUNITY: Sonoran Desert Scrub; mesquite/grassland. Associated vegetation includes: mesquite, willow, saguaro, ocotillo, cholla, and prickly pear.

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1994]
[C2 USDI, FWS 1991]
[C2 USDI, FWS 1989]
[C2 USDI, FWS 1985]

STATE STATUS: None

OTHER STATUS: None (USDA, FS Region 3, 1999)
[Forest Service Sensitive USDA, FS Region 3, 1988]
Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005)

MANAGEMENT FACTORS: Assuming that this species is primarily cliff dwelling, it could be threatened by any activities that destroy cliff habitat (recreational climbing, water impoundments, highway construction, quarry operations). Grazing and pesticide applications in agricultural areas could impact foraging habitat.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: More surveys are needed to delineate the range of this species in the southwestern U.S. Additional information is needed on distribution of breeding colonies, seasonal movements, roosting and foraging requirements. Methods need to be described to determine whether this species can be distinguished from other large molossids acoustically.

LAND MANAGEMENT/OWNERSHIP: BIA - Tohono O'odham Nation; FWS - Buenos Aires National Wildlife Refuge; NPS - Organ Pipe Cactus National Monument; Private.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

D.F. Hoffmeister - University of Illinois, Urbana.

Yar Petryszyn - University of Arizona, Tucson.

ADDITIONAL INFORMATION:

No diurnal roost sites are known in Arizona.

Constantine (1961) found these bats were amenable to captivity after he trained them to eat mealworms. The one born in captivity was remarkably tame; squeaking to attract attention, scampering across the cage to meet visitors, jumping to a hand and running up an arm whenever it had the opportunity, and squeaking when company left.

Ronnie Sidner reported that the original site that they were taken at has disappeared, but they have been caught nearby. They are mainly found along large bodies of water (AGFD 1996).

Revised: 1991-01-08 (JSP)
1992-05-26 (BKP)
1992-10-02 (RBS)
1994-03-25 (DCN)
1996-06-19 (SMS)
1997-03-04 (SMS)
2003-04-13 (AMS)